

CATALOG DOCUMENTATION
REGIONAL ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM - REGION 10
1994-1995 WASHINGTON/OREGON COASTAL STREAMS AND YAKIMA RIVER BASIN STREAMS
FISH AND AMPHIBIAN COUNT DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document

Regional Environmental Monitoring and Assessment Program - Region 10
1994-1995 Washington/Oregon Coastal Streams and Yakima Basin Streams
Fish and Amphibian Count Data Set

1.2 Authors of the Catalog Entry

U.S. EPA NHEERL Western Ecology Division
Corvallis, OR

1.3 Catalog Revision Date

23 March 1999

1.4 Data Set Name

FSHCNT

1.5 Task Group

Region 10

1.6 Data Set Identification Code

00007

1.7 Version

001

1.8 Requested Acknowledgment

These data were produced as part of the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP). If you publish these data or use them for analyses in publication, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U. S. Environmental Protection Agency through its Regional EMAP program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigators

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2.2 Investigation Participant - Sample Collection

U.S. Environmental Protection Agency
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Oregon Department of Environmental Quality
Washington State Department of Ecology
Oregon State University
University of Washington
Yakama Indian Nation Environmental Protection Program

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The primary function of the stream fish data are to provide a snapshot of the fish assemblage present in the stream at the time of sampling. The fish community represents an integral component of stream biological integrity and represents a snapshot of a publicly visible reflection of stream quality.

3.2 Keywords for the Data Set

fish assemblage, fish community, fish species identification,
amphibian assemblage, amphibian community, amphibian
species identification

4. OBJECTIVES AND INTRODUCTION

4.1 Program and Project Objectives

4.1.1 Program Objective

The Regional Environmental Assessment and Monitoring Program (R-EMAP) was initiated to test the applicability of the EMAP approach to answer questions about ecological conditions at regional and local scales. Using EMAP's statistical design and indicator concepts, R-EMAP conducts projects at smaller geographic scales and in shorter time frames.

4.1.2 Project Objective

The objectives of Region 10 1994-1995 Washington/Oregon Coastal Streams and Yakima Basin Streams R-EMAP project were to:

1. Determine the ecological condition of wadeable, 1st-order through 3rd-order streams of the Coast Range Ecoregion and the Yakima River Basin (Columbia Basin Ecoregion).
2. Determine the relationship between the ecological condition of these streams and the predominant land used of the watersheds.
3. Provide the states of Washington and Oregon with information that would assist in the development of water quality biological criteria using indices based on fish/amphibian and invertebrate taxa assemblage information.
4. Determine the applicability of EMAP-derived methods for assessments of ecological condition within streams in the states of Washington and Oregon.

4.2 Data Set Objective

The primary function of the stream fish and amphibian data are to provide a snapshot of the fish and amphibian assemblages present in the stream at the time of sampling.

4.3 Data Set Background Discussion

The fish and amphibian assemblages within a stream represent a critical component of stream biological integrity. The fish community also represents a publicly visible reflection of stream quality.

4.4 Summary of Data Set Parameters

Data set parameters include abbreviated genus/species code and counts of adult, juvenile, and young-of-year for each fish and amphibian species collected and assignments to classifications for the metrics.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To obtain a sample of the fish and amphibian assemblages within a stream during the specified sampling window.

5.1.2 Sample Collection Methods Summary

The assemblages were sampled using a single pass electrofishing distributed in multiple habitats throughout the stream.

5.1.3 Sampling Start Date

May 1994

May 1995

5.1.4 Sampling End Date

Oct 1994

Sept 1995

5.1.5 Platform

NA

5.1.6 Sampling Equipment

backpack electrofishing unit, dip nets, seines, bucket, "bump board" for measuring lengths, formaldehyde

5.1.7 Manufacturer of Sampling Equipment

NA

5.1.8 Key Variables

NA

5.1.9 Sampling Method Calibration

NA

5.1.10 Sample Collection Quality Control

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Office of Research and Development, Las Vegas, NV 89193.

Hayslip, G. A. (editor). 1993. EPA Region 10 In-stream Biological Monitoring Handbook (for wadeable streams in the Pacific Northwest). EPA-910/9-92-013. U. S. Environmental Protection Agency - Region 10, Environmental Services Division, Seattle, WA 98101.

Merritt, G.D. 1994. Biological Assessment of wadeable Streams in the Coast Range Ecoregion and the Yakima River Basin: Final Quality Assurance Project Plan. Washington State Department of Ecology, Environmental Investigations and Laboratory Services, Olympia, WA, 15 pp.

5.1.11 Sample Collection Method Reference

Hayslip, G. A. (editor). 1993. EPA Region 10 In-stream Biological Monitoring Handbook (for wadeable streams in the Pacific Northwest). EPA-910/9-92-013. U. S. Environmental Protection Agency - Region 10, Environmental Services Division, Seattle, WA 98101.

Hayslip, G., D.J. Klemm, J.M. Lazorchak. 1994. Environmental Monitoring and Assessment Program Surface Waters and Region 10 Regional Environmental Monitoring and Assessment Program: 1994 Pilot Field Operations and Methods Manual for Streams on the Coast Range Ecoregion of Oregon and Washington and the Yakima River Basin. Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH.

Lazorchak, J.M., D.J. Klemm, and D.V. Peck. (editors). 1998. Environmental Monitoring and Assessment Program - Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F. U.S. Environmental Protection Agency, Washington, D.C.

Plafkin, J.L., M.T. Barbour, K.D. Porter, S.K. Gross, and R.M. Hughes. 1989. Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish. EPA 440/4-89/001. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

5.1.12 Sample Collection Method Deviations

NA

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

See Hayslip et al. (1994) and Hayslip (1993).

5.2.2 Sample Processing Methods Summary

See Hayslip et al. (1994) and Hayslip (1993).

5.2.3 Sample Processing Method Calibration

See Hayslip et al. (1994) and Hayslip (1993).

5.2.4 Sample Processing Quality Control

See Chaloud and Peck (1994), Merritt (1994), and Hayslip (1993).

5.2.5 Sample Processing Method Reference

See Hayslip et al. (1994) and Hayslip (1993).

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values

NA

6.2 Data Manipulation Description

NA

6.3 Data Manipulation Description

NA

7. DATA DESCRIPTION

7.1 Description of Parameters

| # | Parameter Data | | | Parameter | |
|----|----------------|------|-----|-----------|-------------------------------------|
| | SAS Name | Type | Len | Format | Label |
| 8 | ADULTS | Num | 8 | | the sum, ADULTS |
| 15 | CLASS | Char | 12 | | Class |
| 4 | COM_FISH | Char | 50 | | Fish sampling comments |
| 28 | DATE_COL | Num | 8 | DATE | Date sample Collected |
| 19 | DRY_TOL | Char | 2 | | Amphibians Tolerant to Drying (Y/N) |
| 24 | FAMILY | Char | 20 | | Taxonomic Family |
| 25 | FAM_COM | Char | 15 | | Family (Common Name) |
| 10 | FEED_GRP | Char | 16 | | Feeding Type |
| 22 | GENUS | Char | 25 | | Genus |
| 17 | HAB_PREF | Char | 8 | | Habitat Preference |

| | | | | |
|----|----------|------|-------|---|
| 12 | HIDER | Char | 1 | Hider Species (Y/N)? |
| 7 | JUVENILE | Num | 8 | the sum, JUVENILE |
| 30 | LAT_DD | Num | 8 | Latitude (decimal degrees) |
| 29 | LON_DD | Num | 8 | Longitude (decimal degrees) |
| 21 | NAME_COM | Char | 40 \$ | Common name |
| 14 | ORDER | Char | 20 | Order |
| 9 | ORIGIN | Char | 10 | Species Origin |
| 20 | RARE | Char | 1 | Native Threatened/Endangered/Rare (Y/N) |
| 13 | REPROD | Char | 4 | Reproduction Strategy |
| 27 | SAMPLED | Char | 30 | Site Sampled Code |
| 18 | SEN_TOL | Char | 9 | Sensitive/Tolerant Species |
| 23 | SPECIES | Char | 18 | Species |
| 1 | STRM_ID | Char | 8 \$ | EMAP Stream Identifier |
| 11 | TEM_PREF | Char | 4 | Temperature preference |
| 16 | TOP_CARN | Char | 1 | Top Carnivore? (Y/N) |
| 5 | TOTAL | Num | 8 | the sum, TOTAL |
| 26 | VERTCODE | Char | 8 | Species code |
| 3 | VISIT_NO | Num | 8 F | Visit number |
| 2 | YEAR | Num | 8 | Year sampled |
| 6 | YOY | Num | 8 | the sum, YOY |

7.1.1 Precision to which values are reported

Data were reported to the number of decimal places noted in 7.1.

7.1.2 Minimum Value in Data Set

| Name | Min |
|----------|--------------|
| ADULTS | 0 |
| DATE_COL | 05/16/1994 |
| JUVENILE | 0 |
| LAT_DD | 42.1114 |
| LON_DD | -124.5862217 |
| TOTAL | 0 |
| VISIT_NO | 1 |
| YEAR | 1994 |
| YOY | 0 |

7.1.3 Maximum Value in Data Set

| Name | Max |
|----------|------------|
| ADULTS | 358 |
| DATE_COL | 09/29/1995 |
| JUVENILE | 597 |
| LAT_DD | 48.1784 |
| LON_DD | -119.5619 |
| TOTAL | 922 |
| VISIT_NO | 3 |
| YEAR | 1995 |
| YOY | 271 |

7.2 Data Record Example

7.2.1 Column Names for Example Records

"ADULTS", "CLASS", "COM_FISH", "DATE_COL", "DRY_TOL", "FAMILY", "FAM_COM",
"FEED_GRP", "GENUS", "HAB_PREF", "HIDER", "JUVENILE", "LAT_DD", "LON_DD",
"NAME_COM", "ORDER", "ORIGIN", "RARE", "REPROD", "SAMPLED", "SEN_TOL", "SPECIES",
"STRM_ID", "TEM_PREF", "TOP_CARN", "TOTAL", "VERTCODE", "VISIT_NO", "YEAR", "YOY"

7.2.2 Example Data Records

0, "OSTEICHTHYES", " ", "21JUL1995", "NA", "Cottidae", "Sculpin", "INVERTIVORE", "Cottus",
"BENTHIC", "N", "0,45.991677169,-122.8964313",
"RETICULATE SCULPIN", "SCORPAENIFORMES", "NATIVE", "N", "CN", "Yes",
"INTERMED", "perplexus", "OR001S", "COOL", "N", "10", "COTTPERP", "1,1995,0

0, "OSTEICHTHYES", " ", "21JUL1995", "NA", "Salmonidae", "Trout", "INVERTIVORE",
"Oncorhynchus", "WATER", "N", "0,45.991677169,-122.8964313",
"COHO SALMON", "SALMONIFORMES", "NATIVE", "N", "NLN", "Yes", "SENSITIVE",
"kisutch", "OR001S", "COLD", "Y", "153", "ONCOKISU", "1,1995,0

0, "OSTEICHTHYES", " ", "21JUL1995", "NA", "Salmonidae", "Trout", "INVERTPISCIV",
"Oncorhynchus", "HIDER", "Y", "0,45.991677169,-122.8964313",
"RAINBOW TROUT", "SALMONIFORMES", "NATIVE", "N", "NLN", "Yes", "SENSITIVE",
"mykiss", "OR001S", "COLD", "Y", "40", "ONCOMYKI", "1,1995,0

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-124 Degrees 35 Minutes 10 Seconds West (-124.5862217 Decimal Degrees)

8.2 Maximum Longitude

-119 Degrees 33 Minutes 42 Seconds West (-119.5619 Decimal Degrees)

8.3 Minimum Latitude

42 Degrees 6 Minutes 41 Seconds North (42.1114 Decimal Degrees)

8.4 Maximum Latitude

48 Degrees 10 Minutes 42 Seconds North (48.1784 Decimal Degrees)

8.5 Name of Area or Region

EPA Region 10

The sampling area included the Coast Range Ecoregion and the Yakima River Basin (Columbia Basin Ecoregion).

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives

See Chaloud and Peck (1994), Merritt (1994), and Hayslip (1993).

9.2 Quality Assurance Procedures

See Chaloud and Peck (1994), Merritt (1994), and Hayslip (1993).

9.3 Unassessed Errors

NA

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the WWW site or contact personnel listed in Section 10.3.

10.2 Data Access Restrictions

Data can only be accessed from the WWW server.

10.3 Data Access Contact Persons

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Data Librarian EMAP-Information Management
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401-782-3184
401-782-3030 (FAX)
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10.4 Data Set Format

Data files are in ASCII comma-delimited format.

10.5 Information Concerning Anonymous FTP

Data cannot be accessed via ftp.

10.6 Information Concerning WWW

Data can be downloaded from the WWW site.

10.7 EMAP CD-ROM Containing the Data

Data are not available on CD-ROM.

11. REFERENCES

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Office of Research and Development, Las Vegas, NV 89193.

Hayslip, G. A. (editor). 1993. EPA Region 10 In-stream Biological Monitoring Handbook (for wadeable streams in the Pacific Northwest). EPA-910/9-92-013. U. S. Environmental Protection Agency - Region 10, Environmental Services Division, Seattle, WA 98101.

Hayslip, G., D.J. Klemm, J.M. Lazorchak. 1994. Environmental Monitoring and Assessment Program Surface Waters and Region 10 Regional Environmental Monitoring and Assessment Program: 1994 Pilot Field Operations and Methods Manual for Streams on the Coast Range Ecoregion of Oregon and Washington and the Yakima River Basin. Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH.

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12. TABLE OF ACRONYMS

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